

Sturgeon PWT meeting – Jan 14th 2009
Weir Room, UC Davis

- I. Introductions
- II. Permitting Updates – Russ Bellmer (CDFG)
 - a. Russ gave an explanation of the permitting process and filled us in on what type of permit (4d or Section 10) we might need for a particular project.
 - b. He noted that NOAA/CDFG are hoping to automate the 4d annual reporting by the end of 2009.
 - c. Automation of CDFG SCP processes is also being considered.
 - i. Russ mentioned that the length of time it takes to receive a permit is due to the fact that it must be reviewed by three biologists – a subject matter expert, a regional biologist, and a regulatory biologist.
 - ii. We also learned that a PI should have an SCP if his/her lab is in possession of listed species or CA specimen samples.
 - iii. He warned us, too, that wardens are beefing up enforcement and we must have the entire document with us at all times when collecting or handling sturgeon.
 - d. The 4d rule for green sturgeon will coming out soon in draft (watch for FR Notice to make comments) and the Final likely will be coming out this year. Please feel free to contact him with specific questions on the 4d or SCP and contact Jeffrey Jahn with Section 10 questions.
- III. David Woodbury (NMFS)
 - a. David informed us that CDFG managers are looking into the issue of fishers targeting adult green sturgeon that inhabit the upper Sacramento River (primarily post-spawn, but pre-spawn fish could be susceptible as well). This activity is in contrast to green sturgeon incidentally captured while fishing for white sturgeon, and exposes these fish to handling stress and potential poaching.
 - b. He also described a proposal to construct a kinetic energy facility that would be located just inside the Golden Gate Bridge. The facility would generate electricity as tidal currents flow through large unscreened turbines. NMFS will be assessing potential impacts (including exposure to electromagnetic fields) on green sturgeon.
 - c. David has conducted ESA section 7 consultation on several large projects including:
 - i. West coast groundfish fishery, where there appears to be substantial bycatch of green sturgeon between San Francisco and Santa Cruz
 - ii. 50-year San Francisco Bay region dredging program, assessing the potential exposure of green sturgeon to entrainment from

- large hydraulic dredges and contact with propellers from primarily large ocean-going vessels
- iii. Proposal to create a 77 acre dredge material placement basin in San Pablo Bay in order to transfer the material to the Hamilton site for wetland restoration.

d. He also described a challenge by the Bay Planning Coalition regarding the proposed designation of critical habitat for green sturgeon in South San Francisco Bay.

e. David is also working with green sturgeon tracking data from the Fish Tracking Consortium, which maintains a network of acoustic monitors in the estuary, delta, and Sacramento River. Information gained from this data includes:

- i. It takes ~6.5 days for sturgeon to go from the Golden Gate Bridge to Rio Vista.
- ii. Green sturgeon spend quite a bit of time ping ponging back and forth from Rio vista and Steamboat before upmigrating.
 - 1. Ping pong movements appear to go against the current.
 - 2. Most fish followed this upmigration pattern but a few followed a southerly route around the Mokelumne to the DCC and then up toward the Sac R.
- iii. He also stated that there was current interest in determining whether or not fish screens designed for salmonids are effective in protecting early life stage green sturgeon.

IV. Joel Van Eenennaam (UCD)

- a. Joel gave us an update on the status of the captive green sturgeon broodstock at UC Davis.
 - i. He indicated that the green sturgeon broodstock would be maintained at UCD as long as funding was available.
 - ii. He is particularly interested in testing whether or not female green sturgeon females require a more advanced stage of final maturation (compared to white sturgeon) prior to successful induction of ovulation.
- b. He discussed some of the differences found between the Sacramento River and Klamath River stocks in terms of growth and post-handling stress.
- c. He described his work using ultrasound for sexing of adult sturgeon.

V. Richard Corwin – (USBR)

- a. Richard showed that 3 of 10 acoustically tagged post-spawn green sturgeon exhibited site fidelity in deep pools in the Upper Sac River, one staying at the same site for 205 days!

VI. Bill Poytress (USFWS)

- a. Bill provided results from an investigation of green sturgeon spawning habitat.

- i. He tried various methods to sample eggs but found that traditional egg mats were the best option.
 - ii. Bill emphasized the importance of filtering rinse water from cleaning egg mats because you often find additional eggs.
- b. His group found a total of 42 eggs at different sites and they identified three spawning sites on the Upper Sac, one at rkm 424.5, one at Red Bluff Diversion Dam (RBDD), and one at rkm 377.
- c. He and his collaborators estimated that spawning occurred from April 30-July 4 and that 12 females produced the 42 sampled eggs.
- d. Common characteristics of spawning sites included complex hydraulics, temperatures, and substrates. The spawning site at RBDD may not be optimal because of the potential for eggs to be buried in sand.

VII. Mike Thomas (UCD)

- a. Mike presented tracking data from a juvenile green sturgeon in an investigation of juvenile habitat preference.
 - i. The 1+ fish tended stay near shallow shoals and did not use the shipping channel.
 - ii. Most directional movement was with the current, and much activity was crepuscular.
- b. Future research includes a site fidelity analysis and a kernel home range analysis.

VIII. Josh Israel (UCD)

- a. Josh talked about his collaboration with USBR and USFWS doing habitat mapping for and genetic investigations of spawning green sturgeon.
 - i. He found six mesohabitat sites and he is interested in future work assessing the common characteristics of spawning habitats.
 - ii. With genetic work, he was able to assign 10 acoustically tagged adult sturgeon to the southern DPS (See Richard Corwin above).
 - iii. He attempted genetic identification of eggs sampled by Bill Poytress but had difficulty with DNA extraction, possibly due to inhibitors.
 - iv. Their investigation indicated that the same spawning sites were used multiple times during the spawning period.
 - v. The data suggests that increased flows might trigger outmigration of post-spawn fish but more work needs to be done on this.
- b. Future work includes optimizing DNA extraction for egg identification and parentage work, as well as tagging more fish.

IX. Andrea Drauch (UCD)

- a. Andrea gave an overview of her current and future projects, including:
 - i. Genetic monitoring of the Kootenai River white sturgeon population,
 - ii. Investigation of inheritance in the polyploid white sturgeon
 - iii. Examination of temporal trends in genetic diversity and reproductive success in lower Columbia River white sturgeon
 - iv. Evaluation of range-wide population structure of white sturgeon, Investigation of white sturgeon dispersal behavior
 - v. Estimation of annual reproductive success of white sturgeon over several years in the Sac River.
- X. References – Andrea Drauch (UCD)
 - a. It appears Endnote on the Web may not have capabilities for posting pdfs anytime soon.
 - b. Therefore the best option for our group may be to host an ftp site where articles and reports can be posted.
 - c. We need someone to investigate copyright issues and someone else to look into hosting the site.
- XI. Conceptual model - Josh Israel (UCD)
 - a. Josh will be sending the green sturgeon and white sturgeon life history conceptual models out to the group as soon as he gets approval.
 - b. Alicia and Zac will think about how the group can best utilize/contribute to these models.
 - c. We may end up splitting into subgroups with each group focusing on a particular life stage.
- XII. Discussion of proposals – Joel Van Eenennaam (UCD), Pete Klimley (UCD), David Woodbury (NMFS)
 - a. Joel submitted a proposal to spawn two male/one female green sturgeon from the southern DPS each year over a two year period so that larvae can be used for research.
 - b. There was also some interest from Pete Klimley in maintaining research broodstock.
 - i. What followed was a long discussion with David about the cost-benefit of removing “reproductive potential” from the wild southern DPS in order to accomplish this.
 - ii. There is also some concern that releasing 100- 25 cm fork length green sturgeon (for tagging studies) might reduce the effective population size by over-representing the contribution of one or two families in the population, but at this time we do not have a survival estimate for this size of green sturgeon.
- XIII. Next Meeting – April 8, CDWR, 3500 Industrial Blvd, Sacramento, CA 95691 (10am – 3pm).

Attendees:

Name	Affiliation
Bellmer, Russ	DFG
Chase, Robert	USBR
Corwin, Richard	USBR
Drauch-Schreier, Andrea	UCD
DuBois, Jason	DFG
Gruber, Josh	USFWS
Hearn, Alex	UCD
Israel, Josh	UCD
Jackson, Zac	USFWS
Klimley, Pete	UCD
Liu, Qinqin	DWR
Matica, Zoltan	DWR
Miranda, Javier	DWR
Mora, Ethan	NMFS/UCD
Poytress, Bill	USFWS
Seesholtz, Alicia	DWR
Thomas, Mike	UCD
Trachtenbarg, David	USFWS
Van Eenennaam, Joel	UCD
Wikert, JD	USFWS
Woodbury, David	NMFS